

August 7, 2000

D.T.E. 00-38

Investigation by the Department of Telecommunications and Energy on its own motion to amend 220 C.M.R. §§ 151.00 et seq. Rail Fixed Guideway System of the Massachusetts Bay Transportation Authority

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## I. INTRODUCTION

On November 6, 1998, the Department of Telecommunications and Energy ("Department" or "DTE") promulgated 220 C.M.R. §§ 151.00 et seq. as required by the Federal Transit Administration ("FTA") pursuant to the Intermodal Surface Transportation Efficiency Act of 1991 ("ISTEA"), Pub. L. No. 102-240. FTA regulations 49 C.F.R. 659: Rail Fixed Guideway Systems: State Safety Oversight, require states that operate a rail fixed guideway system to designate a state agency to be responsible for overseeing the Transportation Authority's ("Transportation Authority") rail fixed guideway system's safety and security plans. The Commonwealth of Massachusetts has one rail fixed guideway system which is operated by the Massachusetts Bay Transportation Authority ("MBTA"). The Department exercises oversight of the safety of equipment and operations of the MBTA under the provisions of G.L. c. 161A, § 3(i). In the discharge of this responsibility and in compliance with the FTA requirements, the Department, pursuant to G.L. c. 30A, § 2, promulgated the System Safety Program Standard ("SSPS") which contains hazardous conditions safety regulations, personal

security oversight regulations, and track inspection and maintenance regulations at 220 C.M.R. §§ 151.00 et seq. See D.P.U. 96-116 (1997), D.T.E. 98-11 (1998), and D.T.E. 98-75 (1998). The SSPS establishes the criteria the MBTA uses to create a System Safety Program Plan ("SSPP"). The SSPP must be in compliance with the SSPS.

From March 21 to March 24, 2000, the FTA conducted an audit of the Department's compliance with the minimum requirements of 49 C.F.R. Part 659.7. The FTA in its Final Audit Report ("Report") of the Department's State Safety Oversight of Rail Fixed Guideway Systems, dated March 24, 2000, required that the Department correct five deficiencies and that the Department provide, within 60 days to the FTA, its plan for corrective action of the deficiencies.

To respond to the FTA, the Department opened an investigation to enable it to properly remedy the deficiencies through the amending of the SSPS regulations. On May 23, 2000, the Department filed its response, using the FTA State Safety Oversight Audit Program Safety Response Form(s) ("Response Form") to the deficiencies, citing, where applicable, the Department's proposed amendments.

After proper notice, a hearing was held at the Department's offices on June 8, 2000. The purpose of the public hearing was to discuss proposed amendments to various sections of 220 C.M.R. 151.00 et seq. At the hearing, the Department acknowledged the receipt of the prefiled comments of the Director of the MBTA's Safety Department and received the oral testimony of the Director and Assistant Director of the MBTA's Safety Department, and the Assistant Director of the Department's Transportation Division. The Department also entered four Transportation Division exhibits into evidence in this proceeding.

The Department, in remedying the FTA identified deficiencies through the amending of its regulations, is also mindful of Executive Order 384 which monitors agency regulations for redundant, overly burdensome or otherwise unnecessary regulations. This Order presents an analysis of changes to specific amendments which were of concern to the Transportation Authority. Other amendments, such as are found in 220 C.M.R. 151.02, and 220 C.M.R. 151.04 (see Attachment) for which no formal objections were set forth, are not analyzed.

## II. DEFICIENCIES CITED BY THE FTA

The FTA's Report listed five deficiencies requiring correction. Of the five deficiencies, two deficiencies, Deficiency #1 and Deficiency #3, are corrected by amending

220 C.M.R. 151.00 et seq.

The Department's Responses to Deficiencies #2, #4, and #5 are contained in letters and forms. On June 5, 2000 the FTA forwarded to the Department its close out letter accepting all five of the Department's Responses (Exh. 3).

Deficiency # 1: The DTE's current Program Standard lacks sufficient detail regarding the specifications of its policies and procedures, including time frames, checklists, and forms, for managing the safety oversight of the MBTA.

Deficiency # 3: The DTE has no procedures for formally approving and tracking corrective action plans ("CAPs").

(See FRA Report at 3, 13, 15, 17, 18.)

### III. ANALYSIS AND FINDINGS

The Department reviewed 220 C.M.R. §§ 151.01, 151.03, 151.05, 151.06, 151.07, with the intent of specifying timeframes, checklists and forms for managing the safety oversight of the Transportation Authority. This review is responsive to correcting Deficiency #1. With the intent of remedying shortcomings cited in Deficiency #3, the Department is amending 220 C.M.R. 151.07 with procedures for approving and following up on corrective action plans ("CAP"s). However, given that the FTA has accepted the Department's Responses, an analysis of those amendments which elicited a response from the Transportation Authority is best understood by following them according to the internal structure of the regulations. Thus, the analysis and findings of this Order follow the numerical order of 220 C.M.R. 151.00 et seq..

#### A. 220 C.M.R. 151.01 Purpose and Scope

The Department proposes to amend 220 C.M.R. §151.01 by adding the following to the Purpose and Scope section:

(4) The Department and the Transportation Authority shall meet quarterly to discuss safety and security issues in the months of January, April, July and October.

The Transportation Authority suggested adding " A representative from the Region I

FTA Office shall be invited by the Transportation Authority to attend these meetings".

(Exh. 1).

The Department finds that the proposal to include representatives of the FTA at the quarterly meetings of the Transportation Authority and the Department is inappropriate and counter to the requirements of Executive Order 384. While it is necessary to stipulate a meeting schedule, incorporating into a body of regulation meeting attendees is unnecessary and burdensome. Decisions regarding quarterly meeting attendees shall be determined by both the Department and the Transportation Authority. Further, the FTA has made it clear that they have no role in the oversight process other than ensuring that the oversight process meets the minimum requirements of Part 659<sup>(1)</sup> (Exh. 4). Therefore, the Department will not incorporate the Transportation Authority's proposal into the regulations.

B. 220 C.M.R. 151.03 System Safety Program Plan

At 220 C.M.R. 151.03 (3)(a) the Department proposed:

Review the Transportation Authority's SSPP based on the SSPP Checklist provided by the Department. The Department will review only the final draft bearing the required signatures of the Transportation Authority's management.

The Transportation Authority requested that the Department delete the last sentence, explaining that the Authority finds that "final draft" and "required signatures" are ambiguous terms, implying that the "draft" must be a final product.

The Department, however, believes that "final draft" does not imply that no changes can be made, but rather that all management personnel required by the Authority to review and sign the document have reviewed it. This ensures that the Transportation Authority's upper managers are attesting to the fact that they are in agreement with, and support the content of, the proposed SSPP. Further, the FTA, in a document entitled: Response to MDTE Request for Clarification states that "The process for requiring, reviewing and approving SSPPs is an official one, established by the State Oversight Agency. FTA has no role in determining the elements of this process, other than to ensure that the process meets minimum Part 659 requirements. FTA appreciates that the DTE cannot confer official approval to draft documents that do not have the full authority of the MBTA." (Exh. 4).

Therefore, 220 C.M.R. 151.04(3)(a) will remain as written.

In 220 C.M.R. 151.03 (3)(e) the Department required an immediate update of the Transportation Authority's SSPP at any time. The Transportation Authority argued that

"immediate" is ambiguous, and on reflection, the Department agrees. Therefore, the Department is rephrasing subsection (3)(e) to delete "immediate" and substitute "within 30 days."<sup>(2)</sup>

#### C. 220 C.M.R. 151.06 Hazardous Conditions and Accidents

The Department did not propose any amendments to 220 C.M.R. 151.06 (1)(c), the hazard Matrix categorization, nor did the FTA Report suggest any. However, the Transportation Authority asked that the matrix be replaced by a new matrix that, to date, has not been approved by the FTA for use in a SSPS. The Department reminds the Transportation Authority that the purpose of the instant proceeding is only to correct deficiencies. The Department finds no cause to replace the matrix at this time.

However, at 220 C.M.R. 151. 06 (3) the Department proposed :

In addition to the foregoing matrix, the Transportation Authority shall file notice of any occurrence categorized by the following codes (as listed in the MBTA Manual of Operations) or Other Codes as may be determined by the Department:

Code 1- Fire or smoke

Code 2- Person under a train

Code 3- Train or car derailed

Code 6- Unusual occurrence

Code 7- Bomb threat

The Transportation Authority suggested that notice be filed only for Code 2 and Code 3, and that notice be filed for Codes 1, 6, and 7 only when the occurrence created an unacceptable hazardous condition.

The FTA Audit Team recommended that the Department's proposed notification process, which has been in place for over four years, be incorporated into the SSPS. The MBTA Operation Control Center is required to notify the Department of any of the above occurrences. By requiring notification to the Department of any occurrence listed in the MBTA Manual of Operations, individuals are less likely to misinterpret when notification shall be made. Further, the FTA made clear that the FTA mission is to ensure that the

SSPS meets minimum Part 659 requirements. A State Oversight Agency is within its right to be more stringent than Part 659 requirements. Therefore, the Department's proposal will remain as written.

D. Investigation of Accidents and Unacceptable Conditions

At 220 C.M.R. 151.07(1) The Department proposed the following:

The Transportation Authority may conduct an on site investigation of the occurrence of every accident and every unacceptable hazardous condition. The Department will provide, and the Transportation Authority will use D.T.E. Checklist Form A for this investigation.

The Transportation Authority requests that each time the term "accident" is used the word be followed by "as defined in this document." Accident is defined in the definitions section<sup>(3)</sup> of the regulations, and, therefore, as so defined is applicable throughout the document. However, in an effort to make the language more clear the Department will add after "unacceptable hazardous condition," "as defined in Section 151.02."

The Department concurs with the Transportation Authority that the wording of the first line of 220 C.M.R. 151.07 (2), listing what an investigation shall include, is overly inclusive (Tr. 18, Exh. 1). The line is edited to read: The Investigation shall include when required or appropriate.

The Department proposed amending 220 C.M.R. 151.07 (3) by adding:

The Transportation Authority currently allows the Department direct computer access to the Transportation Authority's information management system.

The Transportation Authority noted that the Authority provides this access as a courtesy, but that this access is not required by the FTA or APTA (Exh. 1). The Transportation Authority asks that the requirement be deleted. The Department is troubled by the Transportation authority's response that because something is not required by the FTA it therefore should not exist. The FTA provides State Oversight Agencies ("SOA") with minimum requirements and does not prohibit a state from imposing requirements that exceed Part 659 minimum requirements. FTA Audit Team members were impressed with the Department's access in "real time" to the Transportation authority's information management system. Clearly this access demonstrates a commitment by the Transportation Authority to provide necessary information to the oversight agency in "real time." However, it indeed is provided on a courtesy basis and is not, at this time, a requirement. Therefore, the Department will strike this sentence from 220 C.M.R. 151.07(3).

The Transportation Authority requested the deletion of 220 C.M.R. 151.07 (4)(a) 7. This section requires that the final report of an accident investigation include an estimated cost of resolution. The Department, however, finds that an estimated cost of resolution is of value to both the Authority and the Department. The correlation between cost, time and possibility of performance is evident. An extraordinary cost might even require legislation. An estimate is a good indicator of a schedule for correction. The Department declines to remove the estimate requirement.

As a final amendment, the Department proposed at 220 C.M.R. 151.07(6) :

**The Transportation Authority, if aggrieved by any order or decision of the Director of the Transportation Division, has a right of appeal to the Commission pursuant to the provisions of G.L. c. 161A § 22 which provide that in the event of any conflict between the regulatory powers and duties of the Department and the regulatory powers and duties of the Transportation Authority the Department shall resolve such dispute and exercise such powers as it deems required in the particular instance.**

**Such appeal shall be claimed by filing with the Secretary of the Department, and with the Director of the Transportation Division, a written claim within twenty days of the order or decision appealed from. The appeal shall specifically set forth the grounds upon which the Transportation Authority claims to be aggrieved by the order or decision of the Director. Such appeal shall be heard on the evidence introduced in connection with the investigation, report, decision or order on appeal. No new evidence will be received at the hearing on appeal.**

During informal discussion with the Transportation Authority regarding DTE proposed amendments to 220 C.M.R. §§ 151.00 et seq., the Transportation Authority indicated a desire for a SSPS-specific appeal provision. This appeal provision would be utilized by the Transportation Authority in the event the Authority wanted to dispute a finding or decision of the Transportation Division. The Department drafted section 151.07 (6) to address the Transportation Authority's concerns.

The Transportation Authority, however, in requesting the deletion of the proposed 220 C.M.R. 151.07(6), asks for a three person panel appointed by the Chairman of the Department, consisting of two commissioners and a representative of the FTA. The panel would have thirty days within which to hear the appeal of the Transportation Authority from a decision of the Director of the Transportation Division.

The Transportation Authority, together with all other transportation entities regulated by the Department, is entitled to an appeal process concerning a decision or finding of the Transportation Division. For that reason, such a provision currently exists at 220 C.M.R.

§ 250.06 titled: Appeals from Decisions of the Transportation Division.

The Department proposal at 220 C.M.R. 151.07(6) is essentially 220 C.M.R. § 150.06 with some slight modification. The Transportation Authority proposal is much different and counter to the way in which the commission currently reviews Transportation division appeals. Further, the Transportation Authority proposal requires FTA involvement, which would be unprecedented at the SOA level. The FTA wrote on June 7, 2000:

FTA Regional Office personnel will participate in meetings between the State Oversight Agency and Regulated Fixed Guideway Systems ("RFGS") and will support the cooperative resolution of conflicts between an SOA and RFGS. However, it is inappropriate for the participation to be required in an SOA Program Standard; the SOA must implement its program using its own designated legal authority. FTA has no enforcement role in the SOA's program" (Exh. 4).

In addition, G.L. c. 161A, § 22 provides that in the event of any conflict between the regulatory powers and duties of the Department and the regulatory powers and duties of the Transportation Authority, the Department shall resolve such dispute and exercise such powers as it deems required in a particular instance. Further, given that an appeal process is already specified within the Department's regulations, both proposals are in conflict with Executive Order 384. The appeal process available to the Transportation Authority remains 220 C.M.R.

§ 250.06.

#### IV. ORDER

Accordingly, after notice, hearing and considered it is

ORDERED: That in accordance with G.L. c. 161A, § 3 and G.L. c. 30A, § 2, and as required by 49 C.F.R. 659, 220 C.M.R. 151.00 et seq. as amended and set forth in

Attachment A be and is hereby ADOPTED; and it is

FURTHER ORDERED: That the Secretary of the Department of Telecommunications and Energy attest to a true copy of the regulations and transmit said attested true copy to the Office of the Secretary of State for the Commonwealth of Massachusetts for publication in the Massachusetts Register for inclusion in the Code of Massachusetts Regulations, and that said 220 C.M.R. 155.00 et seq. be effective upon publication in the Massachusetts Register.

By Order of the Department,

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James Connelly, Chairman

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W. Robert Keating, Commissioner

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Eugene J. Sullivan, Jr., Commissioner

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Paul B. Vasington, Commissioner

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Deirdre K. Manning, Commissioner

## ATTACHMENT A

### 220 C.M.R. 151.00: RAIL FIXED GUIDEWAY SYSTEM: SAFETY SYSTEM PROGRAM STANDARD

#### Section

151.01: Purpose and Scope

151.02: Definitions

151.03: Safety System Program Plan

151.04: System Security Plan

151.05: Internal Safety Audits

151.06: Hazardous Conditions and Accidents

151.07: Investigation of Accidents and Unacceptable Hazardous Conditions

#### 151.01: Purpose and Scope

(1) 220 C.M.R. §§ 151.00 et seq. establishes the standard of the Commonwealth of Massachusetts oversight required to implement the provisions of 49 U.S.C. 5330, and

Title 49 of the Code of Federal Regulations, Part 659, Rail Fixed Guideway Systems, State Oversight.

(2) The Department of Telecommunications and Energy (Department) exercises jurisdiction over safety of equipment and operations of rail fixed guideway systems pursuant to M.G.L. c. 161A, § 3 (i).

(3) 220 C.M.R. 151.00 is applicable to the Massachusetts Bay Transportation Authority (Transportation Authority), the transit agency operating rail fixed guideway systems in the Commonwealth of Massachusetts.

(4) The Department and the Transportation Authority shall meet quarterly to discuss safety and security issues the months of January, April, July, and October.

(5) The Transportation Authority shall transmit to the Department a monthly Safety Department Multi-Mode Review.

(6) The Department shall submit an Annual Report and Annual Certification of the Transportation Authority to the Federal Transit Administration ("FTA") on or before March fifteenth of each year.

(7) Revision(s) to the Program Standard by the Department must be submitted to the Transportation Authority within 30 days from Department promulgation. The Transportation Authority must acknowledge in writing receipt of the Program

Standard revision(s) and provide, within 60 days, a schedule for any required revision(s) to its SSPP.

(8) The Department will submit to the FTA any Program Standard revisions within thirty days of promulgation by the Department.

(9) The Department or its designee shall conduct an on-site Triennial Audit, starting in June 1999 and every three years after 1999, to verify compliance of the Transportation Authority with the SSPP and the SSP. Based on the Department's Triennial Audit Checklist, the Department shall make an evaluation of the SSPP and the SSP and will issue a report and recommendations. Implementation of the recommendations of the Triennial Audit shall be monitored according to the procedures set for in 220 C.M.R. 151.07 (4). The Department will file this report with the FTA within 30 days of the completion of the Triennial Audit.

#### 151.02: Definitions

Accident is defined as an event that occurs when

- (a) an individual dies;
- (b) an individual is injured and immediately receives medical treatment away from the scene; or
- (c) a collision, derailment, or fire results in property damage in excess of \$100,000.

Corrective Action Plan (CAP) is a plan to minimize, control, warn of, or eliminate any investigated hazardous condition within a specified time.

Guidelines means a minimum standard set by the Federal Transit Administration (FTA), including, but not limited to, American Public Transit Association's (APTA) "Manual for the Development of Rail Transit System Safety Program Plans" (1991).

Hazardous Condition means a condition that may endanger human life or property. It includes unacceptable hazardous conditions. Unacceptable Hazardous Condition means a hazardous condition determined to be an unacceptable hazardous condition under the Accident /Hazard Matrix set out at 220 C.M.R. 151.06 (1)(c). Acceptable Hazardous Condition means a hazardous condition inherent to the operation of the transit system which, based on review and concurrence of the transit agency management and the Department, is impractical to eliminate, but may require special procedures to reduce risk of accident.

Internal Safety Audit Process (ISAP) means a formal audit process conducted by the Transportation Authority in conformance with the APTA Manual Checklist Number 9 to determine if all Transportation Authority organizational elements, equipment, procedure and functions are performing as intended within the scope of the SSPP. At a minimum, each of the 14 elements specified in Checklist Number 9 must be audited once every three years.

Rail Fixed Guideway System means any light, heavy, or rapid rail system, monorail, inclined plane, funicular, trolley or automated guideway that is:

- (a) Included in the FTA's calculation of fixed guideway route miles or receives funding under the FTA's formula program for urbanized areas; and
- (b) Not regulated by the Federal Railroad Administration.

Safety means freedom from danger.

Security means freedom from intentional danger.

System Safety Program Standard (SSPS) means the standard developed and adopted by the Department, which, at a minimum, complies with the American Public Transit Association (APTA) Guidelines and which addresses the safety and security of passengers and employees.

System Safety Program Plan (SSPP) means a document adopted by the Transportation Authority setting forth its safety policies, objectives, responsibilities, and procedures.

System Security Plan (SSP) means a document adopted by the Transportation Authority setting forth its security policies, objectives, responsibilities, and procedures.

Transportation Authority means the entity operating a rail fixed guideway system.

### 151.03 System Safety Program Plan

(1) The Transportation Authority shall prepare a system safety program plan (SSPP). The SSPP shall conform to the FTA Guidelines and to 220 C.M.R. 151.00.

The SSPP shall address the personal safety of the Transportation Authority's passengers according to the guidelines set forth in the APTA MANUAL FOR THE DEVELOPMENT OF RAIL TRANSIT SYSTEM SAFETY PROGRAM PLANS.

(2) The SSPP shall describe:

- (a) The procedure for communication between the Transportation Authority and the Department and for on-site safety reviews by the Department.
- (b) The procedure for investigating accidents and hazardous condition.
- (c) The procedure for reporting accidents and unacceptable hazardous conditions to the Department.
- (d) The procedure for submitting CAPs to the Department.
- (e) The procedure for conducting internal safety audits and submitting reports to the Department.

(3) The Department shall:

- (a) Review the Transportation Authority's SSPP based on the SSPP Checklist provided by the Department. The Department will review only the final draft bearing the required signatures of the Transportation Authority's management.
- (b) After a satisfactory review, the Department shall approve the SSPP, and so advise the Transportation Authority, in writing within 30 days.
- (c) Review and approve on or before September first of each year, the revised SSPP submitted by the Transportation Authority.
- (d) Be notified in writing, on or before September first of each year, in the event that after the Transportation Authority's annual review, there are no revisions to the SSPP.
- (e) Require within 30 days an update of the Transportation Authority's SSPP at any time.

(4) The Department may perform inspections, investigations and reviews of the operation and maintenance of the Transportation Authority's rail fixed guideway system to determine whether the safety procedures of the Transportation Authority comply with the SSPP.

#### 151.04 System Security Program

(1) The Transportation Authority shall prepare a System Security Plan (SSP). The SSP shall conform to the FTA Guidelines and to 220 C.M.R. 151.00.

(2) The SSP shall address:

(a) The personal security of the Transportation Authority's passengers.

(b) The personal security of the Transportation Authority's employees.

(c) The guidelines set forth in FTA-MA-90-700-1-94-1. TRANSIT SYSTEM SECURITY PROGRAM PLANNING GUIDE.

(3) The SSP shall describe:

(a) The procedure for communication between the Transportation Authority and the Department and for on-site security reviews by the Department.

(b) The procedure for investigating security conditions.

(c) The procedure for reporting security issues to the Department.

(d) The procedure for submitting security CAPs to the Department.

(e) The procedure for conducting internal security audits and submitting reports to the Department.

(4) The Transportation Authority shall:

(a) Submit a revised SSP to the Department for its review and approval on or before March first of each year.

(b) In the event that there are no revisions after the Transportation Authority's annual review, notify the Department in writing on or before March first of each year.

(c) Provide within 30 days update of the SSP at any time an update is requested by the Department.

(5) The Department may perform inspections, investigations and reviews of the operation and maintenance of the Transportation Authority's rail fixed guideway system to determine whether the actual security procedures of the Transportation Authority comply with the SSP.

#### 151.05 Internal Safety and Security Audit Process

(1) The Transportation Authority shall perform planned and scheduled safety and security audits to evaluate its own compliance and measure the effectiveness of the SSPP and the SSP. The Transportation Authority shall notify the Department seven days before each such audit is begun. The audits must be in conformance with the APTA Manual's Checklist Number 9, (and updates thereto).

(2) The Transportation Authority's internal safety or security audit shall:

(a) Be performed by qualified personnel;

(b) Be recorded on a written checklist approved by the Department

(c) Assess the activity under audit for compliance with the SSPP.

(d) Require any CAPs which result from an audit be submitted to the Department in writing within 30 days of the completion of the audit.

(e) Require that all CAPs be reviewed by the Department.

(f) Provide that on receipt of the Transportation Authority's final audit report, if CAPs are included, the Department has ten days in which to accept or reject the CAP in

writing. If the Department rejects the CAP, the Transportation Authority has twenty days to submit a revised CAP to the Department. A reasonable extension of time, if warranted beyond the twenty days, may be granted, by the Department.

(g) Report to the Department, using the Department's CAP identification number, when the requirements of an accepted CAP have been satisfied.

(3) Qualifications for Auditors:

(a) An auditor may be a manager of the activity under audit.

(b) An auditor may not be the supervising manager of the activity under audit.

(4) The Transportation Authority shall file with the Department on or before February 15 of each year, an annual report of each internal safety and security audit conducted during the past calendar year. The report shall state the results of each audit in terms of the adequacy and effectiveness of the SSPP and the SSP.

5) The Department will provide a checklist titled, DTE Checklist For Review of Annual Internal Audit Reports which is a list of requirements for the annual internal audit reports. The Department shall witness the Transportation Authority's internal audit activities, in whole or on a sample basis, and will monitor the internal audit program.

#### 151.06 Hazardous Conditions and Accidents

(1) Hazard Categorization:

(a) Hazard Severity is a subjective measure of a credible mishap resulting from personnel error, environmental conditions, design inadequacies, and/or procedural

deficiencies for system, subsystem, or component failure or malfunction, categorized as follows:

1. Catastrophic--Death or system loss.
2. Critical--Severe injury, severe occupational illness, or major system damage.
3. Marginal--Minor injury, minor occupational illness, or minor system damage.
4. Negligible--Less than minor injury, minor occupational illness, or minor system damage.

(b) Hazard Probability is the probability that a specific hazard will occur during the planned life expectancy of the system element, subsystem, or component. It can be described subjectively in potential occurrences per unit, events, population, items, or activity as follows:

1. Frequent--Likely to occur frequently to individuals, or continuously experienced in equipment.
2. Probable--Likely to occur several times in the life of an item.
3. Occasional--Likely to occur sometime in the life of an item.
4. Remote--Unlikely but possible to occur in the life of an item.
5. Improbable--Unlikely to occur.

c) A hazard matrix is an indicator of the correlation among the 4 categories of severity of conditions that may endanger human life or property and the 5 patterns of frequency of the occurrence of the hazardous condition. The matrix classifies the degree of risk, and also provides a guideline for reporting of an occurrence and subsequent action for hazard resolution.

### Hazard Matrix

	<i><b>Catastrophic</b></i>	<i><b>Critical</b></i>	<i><b>Marginal</b></i>	<i><b>Negligible</b></i>
<i><b>Frequent</b></i>	UNACCEPTABLE	UNACCEPTABLE	UNACCEPTABLE	Acceptable**
<i><b>Probable</b></i>	UNACCEPTABLE	UNACCEPTABLE	UNDESIRABLE	Acceptable**
<i><b>Occasional</b></i>	UNACCEPTABLE	UNDESIRABLE	UNDESIRABLE	ACCEPTABLE
<i><b>Remote</b></i>	UNDESIRABLE	UNDESIRABLE	Acceptable**	ACCEPTABLE
<i><b>Improbable</b></i>	Acceptable**	Acceptable**	Acceptable**	ACCEPTABLE

Acceptable\*\* - means acceptable based on prior management decision.

(2) Based on the foregoing matrix, the Transportation Authority shall file notice of the existence of hazardous conditions in the following manner:

(a) All frequent, probable, or occasional catastrophic or critical occurrences or conditions must be reported to the Department by telephone/electronic communications, within 2 to 4 hours of the occurrence of the accident or hazardous condition, and be reported in writing by the next business day on a form approved by the Department.

(b) All frequent, marginal occurrences must be reported to the Department by telephone within 24 to 48 hours, and be reported in writing on a form approved by the Department within five days of the occurrence of the accident or hazardous condition.

(c) All undesirable occurrences must be reported to the Department

in writing on a form approved by the Department within five days of the occurrence of the accident or hazardous condition.

(3) In addition to the foregoing matrix, The Transportation Authority shall file notice of any occurrence categorized by the following codes (as listed in the MBTA Manual of Operations) or Other Codes as may be determined by the Department:

Code 1- Fire or smoke

Code 2- Person under a train

Code 3- Train or car derailed

Code 6- Unusual occurrence

Code 7- Bomb threat

(4) Notification shall be served on the Department Inspector assigned to the Transportation Authority or the Department's Transit Engineer. If the Inspector or the Transit Engineer cannot be contacted, notification shall be served on the Assistant Director of the Transportation Division.

(5) Notification process by the Transportation Authority to the Department shall include, but not be limited to :

(a) Name and Title of person reporting

(b) Location of condition

(c) Time and date of discovery of condition

(d) Description of condition

(e) Casualties

(f) Property damage estimate

(e) Name and telephone number of person from whom additional information may be obtained.

(6) After initial notification, the Department may require the Transportation Authority to conduct further activities in order to provide more detailed information.

#### 151.07 Investigation of Accidents and Unacceptable Conditions

(1) The Transportation Authority may conduct an on site investigation of the occurrence of every accident and every unacceptable hazardous condition, as defined in section 151.02. The Department will provide, and the Transportation Authority will use D.T.E. Checklist Form A for this investigation.

(2) The Investigation shall include when required or appropriate:

(a) On-site inspection

(b) Visual examination and measurements

(c) Examination by the following methods and/or tests:

1. radiographic,

2. ultrasonic,

3. magnetic particle,

4. liquid dye testing,

(d) Functional testing of:

1. vehicle,

2. track,

3. traction power,

4. signals and/or,

5. communication equipment,

(e) Interviews with witnesses,

(f) Review of maintenance records and procedures,

(g) Review of employee training and certification,

(h) Photographs,

(i) Police and coroner reports,

- (j) Review of alcohol and drug test results,
- (k) Review of hours of service records,
- (l) Review of operating rules and procedures, and/or
- (m) Other related matters.

(3) The Transportation Authority shall prepare a preliminary written report of its investigation. The Department may request a review of data used by the Transportation Authority in the preparation of its reports. The preliminary report shall specify:

- (a) The probable cause of the accident and/or hazard,
- (b) Any contributory cause of the accident and/or hazard,
- (c) A corrective action plan,
- (d) A schedule for prevention of accidents or mitigation of hazard,
- (e) A schedule for implementation of corrective action, and/or
- (f) Other related matters.

(4) The Transportation Authority shall submit to the Department the final report of such investigation within 30 days of the last day of the month of the occurrence.

(a) The final report shall identify:

1. accident and/or
2. unacceptable hazardous condition
3. CAP resolution reported on D.T.E. Form B
4. time frame for resolution
5. agency responsible for resolution
- 6 personnel responsible for resolution
7. estimated cost of resolution

(b) In the event that the Transportation Authority does not file its final report as provided in (4)(a), the Transportation Authority shall submit to the Department a bi-

weekly written status report of any investigation not completed within 60 days of the occurrence.

(c) On receipt of the Transportation Authority's final report and the CAP the Department has ten days in which to accept or reject the plan in writing. If the Department rejects the CAP the Transportation Authority has twenty business days to submit a revised CAP to the Department. A reasonable extension of time, if warranted beyond the twenty days, may be granted, by the Department.

(5) The Department may investigate the Transportation Authority's compliance with the requirements of 220 C.M.R. 151.06(2) and (3) and issue any Orders that it deems necessary.

(6) Investigation reports and corrective action plans prepared by the Transportation Authority and filed with the Department shall not be admissible as evidence in any civil action for damages based on or arising out of matters covered therein, unless specifically authorized by the Department.

Regulatory Authority: 220 C.M.R. 151.00, 49U.S.C. 5330, 49 C.F.R. 659.

1. FTA citing to Part 659 refers to 49 C.F.R. 659.

2. Similarly, the Department is editing 220 C.M.R. 151.04(4)(c) to change "immediate" to "within 30 days".

3. See 220 C.M.R. 151.02.